

ARTICLE 11

EVALUATION OF CRITICAL NONSTRUCTURAL COMPONENTS AND SYSTEMS

11.0 INTRODUCTION

This article covers nonstructural components and systems critical to patient care.

11.01 NONSTRUCTURAL EVALUATION PROCEDURE

- 1.** The nonstructural evaluation process shall include the following steps:
 1. Site visit and data collection;
 2. Identification of building SPC;
 3. Identification of critical nonstructural systems;
 4. Identification of critical care services housed in the building;
 5. Final evaluation for the critical nonstructural elements and systems;
 6. Preparation of evaluation report, and
 7. Submittal of evaluation report to OSHPD.
- 2.** A general acute care hospital facility may be exempted from a nonstructural evaluation upon submittal of a written statement by the hospital owner to OSHPD certifying the following conditions:
 1. The building is designated "NPC 1" in conformance with Table 11.1 "Nonstructural Performance Categories",
or
 2. The building is designated "NPC 4" in conformance with Table 11.1 "Nonstructural Performance Categories"
and provided:
 - a) The building was designed and constructed under a building permit issued by OSHPD;
 - b) All subsequent repairs, remodels, additions and alterations were performed under a permit issued by OSHPD, and
 - c) Fire sprinkler systems have been retrofitted in conformance with Table 11.1, "Nonstructural Performance Categories".

11.1 NONSTRUCTURAL PERFORMANCE CATEGORIES

Each building shall be assigned a Nonstructural Performance Category (NPC), based upon the degree of anchorage and bracing of selected nonstructural elements and systems. This includes architectural, mechanical, electrical, and hospital equipment in addition to associated conduit, ductwork, piping, and machinery. NPCs are defined in Table 11.1.

11.1.1 Site Visit and Evaluation

The evaluator shall:

1. Visit the building to observe and record the type, nature, and physical condition of the nonstructural elements and systems;
2. Note the SPC of the buildings based on procedures followed in Article 2;
3. Assemble building design data including:
 - a. Construction drawings, specifications and calculations, and
 - b. All drawings, specifications and calculations for remodeling work.
4. During the visit, the evaluator shall:
 - a. Verify existing data;
 - b. Develop other needed data (e.g., measure and sketch building if necessary);
 - c. Verify the critical nonstructural systems;
 - d. Verify the critical care areas/services, and
 - e. Identify special conditions which may impact the nonstructural systems or endanger the function of the critical care areas/services.

If drawings are not available, the site visit and evaluation shall be performed as described in this section.

5. Review other data available such as assessments of building performance and function following past earthquakes;
6. Prepare a summary of data using an OSHPD approved format;
7. Perform the evaluation using the procedures in Section 11.2.
8. Prepare a report of the findings of the evaluation using an OSHPD approved format.

11.2 EVALUATION OF BUILDINGS

Conforming and nonconforming buildings shall be placed in an NPC based upon the degree of anchorage and bracing for those systems and equipment specified in Table 11.1. Buildings which do not meet the requirements for NPC 2 as defined in Table 11.1 shall be placed in NPC 1.

11.2.1. Procedures for NPC 2

The following steps shall determine if the building meets the criteria for NPC 2:

11.2.1.1 Scope of the Evaluation

The anchorage and bracing of components and equipment for the following systems shall be evaluated for conformance with Part 2, Title 24:

- a) Communications systems;
- b) Emergency power systems;
- c) Bulk medical gas systems, and

- d) Fire alarm systems.

11.2.1.2 Evaluation Procedure

- a) Identify components and equipment that are subject to the requirements of NPC 2;
- b) Conduct an inventory of components and equipment listed in 11.2.1.1, noting whether the items are anchored or braced;
- c) Determine if the anchorage or bracing of any components and equipment identified in Section 11.2.1.2(a) has been installed under a permit issued by OSHPD. Drawings showing the installation and bearing an OSHPD approval stamp are required to show that the installation conforms to Part 2, Title 24. Anchorage and bracing of elements installed under a permit issued by OSHPD are considered to meet the requirements of NPC 2;
- d) If the components and equipment inventoried in 11.2.1.2(b) is anchored or braced, but does not meet the requirements of Section 11.2.1.2(c), determine by calculation if the bracing and anchorage is sufficient to meet the code requirements specified in Table 11.1. Calculations of bracing and anchorage capacity shall be based upon information shown in the construction documents. If these documents are incomplete or unavailable, the evaluation shall be based on the as-built conditions, with the capacity of fasteners to masonry, concrete, or wood determined by approved tests, and
- e) If any of the items inventoried in 11.2.1.2(b) are unanchored or inadequately braced as determined by Section 11.2.1.2(d), the building shall be placed in NPC 1.

11.2.2 Procedures for NPC 3

The following steps shall determine if the building meets the criteria for NPC 3:

11.2.2.1 Scope of the Evaluation

The components and equipment to be evaluated are specified in Table 11.1.

11.2.2.2 Evaluation Procedure

- a) To be eligible for evaluation for NPC 3, the building must meet the criteria for NPC 2;
- b) Identify components and equipment that are subject to the requirements of NPC 3;
- c) Conduct an inventory of components and equipment specified in Table 11.1, NPC 3, noting whether the components and equipment are anchored or braced;
Exception: Any general acute care hospital facility located in both a “rural area” as defined in Section 70059.1, Division 5, Title 22 and Seismic Zone 3 shall comply with the fire sprinkler system anchorage and bracing requirements of NFPA 13, 1994 edition or subsequent standard by January 1, 2013.
- d) Determine if the anchorage or bracing of any of the components and equipment inventoried in Section 11.2.2.2(c) has been installed under a permit issued by OSHPD. Drawings showing the installation and bearing an OSHPD approval stamp are required to show that the installation conforms to Part 2, Title 24. Anchorage and bracing of elements installed under a permit issued by OSHPD are considered to meet the requirements of NPC 3;
- e) If the components and equipment inventoried in 11.2.2.2(c) is anchored or braced, but does not meet the requirements of Section 11.2.2.2(d), determine by calculation if the bracing and anchorage is sufficient to meet the code requirements specified in Table 11.1. Calculations of bracing and anchorage capacity shall be based upon information shown in the construction documents. If these documents are incomplete or unavailable, the evaluation shall be based on the as-built conditions, with the capacity of fasteners to masonry, concrete, or wood determined by approved tests, and

- f) If any of the items inventoried in 11.2.2.2(c) is inadequately anchored or braced as determined by Section 11.2.2.2(e), the building shall be placed in NPC 2.

11.2.3 PROCEDURES FOR NPC 4

The following steps shall be followed to determine if the building meets the criteria for NPC 4:

11.2.3.1 Scope of the Evaluation

The components and equipment to be evaluated are specified in Table 11.1.

11.2.3.2 Evaluation Procedure

- a) To be eligible for evaluation for NPC 4, the building must meet the criteria for NPC 3;
- b) Identify components and equipment that are subject to the requirements of NPC 4;
- c) Conduct an inventory of components and equipment specified in Table 11.1, NPC 4, noting whether the components and equipment are anchored or braced;
- d) Determine if the anchorage or bracing of any of the components and equipment inventoried in Section 11.2.3.2(c) has been installed under a permit issued by OSHPD. Drawings showing the installation and bearing an OSHPD approval stamp are required to show that the installation conforms to Part 2, Title 24. Anchorage and bracing of elements installed under a permit issued by OSHPD are considered to meet the requirements of NPC 4;
- e) If the components and equipment inventoried in 11.2.3.2(c) are anchored or braced, but do not meet the requirements of Section 11.2.3.2(d), determine by calculation if the bracing and anchorage is sufficient to meet the code requirements specified in Table 11.1. Calculations of bracing and anchorage capacity shall be based upon information shown in the construction documents. If these documents are incomplete or unavailable, the evaluation shall be based on the as-built conditions, with the capacity of fasteners to masonry, concrete, or wood determined by approved tests, and
- f) If any of the items inventoried in 11.2.3.2(c) is unanchored or inadequately braced as determined by Section 11.2.3.2(e), the building shall be placed in NPC 3.

11.2.4 PROCEDURES FOR NPC 5

The following steps shall determine if the building meets the criteria for NPC 5:

11.2.4.1 Scope of the Evaluation

The components to be evaluated are specified in Table 11.1.

11.2.4.2 Evaluation Procedure

- a) To be eligible for evaluation for NPC 5, the building must meet the criteria for NPC 4 and have provisions for onsite supplies of water and holding tanks for wastewater for 72 hours of acute care operation and onsite fuel supply for 72 hours of acute care and radiological service operation;
- b) Identify components and equipment that are subject to the requirements of NPC 5;
- c) Conduct an inventory of components and equipment specified in Table 11.1, NPC 5, noting whether the components and equipment are anchored or braced;
- d) Determine if the anchorage or bracing of any of the components and equipment inventoried in Section 11.2.4.2(c) has been installed under a permit issued by OSHPD. Drawings showing the installation and bearing

an OSHPD approval stamp are required to show that the installation conforms to Part 2, Title 24. Anchorage and bracing of elements installed under a permit issued by OSHPD are considered to meet the requirements of NPC 5;

- e) If the components and equipment inventoried in 11.2.4.2(c) are anchored or braced, but do not meet the requirements of Section 11.2.4.2(d), determine by calculation if the bracing and anchorage is sufficient to meet the code requirements specified in Table 11.1. Calculations of bracing and anchorage capacity shall be based upon information shown in the construction documents. If these documents are incomplete or unavailable, the evaluation shall be based on the as-built conditions, with the capacity of fasteners to masonry, concrete, or wood determined by approved tests, and
- f) If any of the items inventoried in 11.2.4.2(c) is inadequately anchored or braced as determined by 11.2.4.2(e), the building shall be placed in NPC 4.

Table 11.1
Nonstructural Performance Categories

Timeframes	Nonstructural Performance Category	Description
	NPC 1	Buildings with equipment and systems not meeting the bracing and anchorage requirements of any other NPC.
January 1, 2002	NPC 2	<p>The following are braced or anchored in accordance with Part 2, Title 24:</p> <ul style="list-style-type: none"> # communications systems; # emergency power supply; # bulk medical gas systems; and # fire alarm systems.
January 1, 2008	NPC 3	<p>The building meets the criteria for NPC “ 2” and in Critical Care Areas, clinical laboratory service spaces, pharmaceutical service spaces, radiological service spaces, and central and sterile supply areas, the following components meet the bracing and anchorage requirements of Part 2, Title 24:</p> <ul style="list-style-type: none"> # Nonstructural components, listed in the 1995 CBC, Part 2, Title 24, Table 16A-O, Part 2; and # Equipment, as listed in the 1995 CBC, Part 2, Title 24, Table 16A-O, “Equipment” including equipment in the physical plant that service these areas. <p><i>Exceptions:</i></p> <ol style="list-style-type: none"> 1. Seismic restraints need not be provided for cable trays, conduit and HVAC ducting. Seismic restraints may be omitted from piping systems, provided that an approved method of preventing release of the contents of the piping system in the event of a break is provided. 2. Only elevator(s) selected to provide service to patient, surgical, obstetrical, and ground floors during interruption of normal power need meet the structural requirements of Part 2, Title 24. <ul style="list-style-type: none"> # Fire sprinkler systems comply with the bracing and anchorage requirements of NFPA 13, 1994 edition or subsequent applicable standards. <p><i>Exception:</i> Acute care hospital facilities in both a rural area as defined by Section 70059.1, Division 5 of Title 22 and Seismic Zone 3 shall comply with the bracing and anchorage requirements of NFPA 13, 1994 edition or subsequent applicable standards by January 1, 2013.</p>
	NPC 4	The building meets the criteria for NPC 3 and all architectural, mechanical, electrical systems, components and equipment, and hospital equipment meet the bracing and anchorage requirements of Part 2, Title 24. This category is for classification purposes of the Office of Emergency Services.
January 1, 2030	NPC 5	The building meets the criteria for NPC “ 4 ” and on-site supplies of water and holding tanks for wastewater, sufficient for 72 hours emergency operations, are integrated in to the building plumbing systems. As an alternative, hook-ups to allow for the use of transportable sources of water and sanitary waste water disposal have been provided. An on-site emergency system as defined within Part 3, Title 24 is incorporated into the building electrical system for critical care areas. Additionally, the system shall provide for radiological service and an onsite fuel supply for 72 hours of acute care operation.